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ABSTRACT

This final report describes activities and accomplishments of Project RIME (Reading Instructional Methods of Efficacy), a 3-year project to develop, field test, and disseminate a model of professional development for early elementary and special education teachers focusing on methods for teaching early reading and spelling to children at risk for reading and spelling failure. The model was composed of first, a 3-unit graduate course in assessment and instruction for students with early reading and spelling difficulties and second, school collaboration to support teachers through classroom visits, peer coaching, and group discussions. The project's three phases involved development of the model, implementation and evaluation in four schools, and replication in three additional schools. Each of the six project goals is first stated and then followed by a description of how each goal's specific objectives were met. Evaluation studies for each year are reported in detail. Appendices include the course syllabus, a bibliography of shared materials among collaborators, an internship syllabus, a teacher assessment measure, and forms used for lesson planning and collaboration. (Contains 52 references.) (DB)

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Project RIME Final Report

Providing Early Elementary and Special Education Teachers with Preparation in Reading Instructional Methods of Efficacy

November 1999

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PROJECT SUMMARY

Project RIME has just completed the final year of a three-year special project. The intent of *Project RIME, Reading Instructional Methods of Efficacy*, was to develop, field test, and disseminate a model of professional development that was designed to increase the knowledge and skills of early elementary and special education teachers, as well as preservice and inservice teachers in teaching early reading and spelling to children at risk for reading and spelling failure. The model was composed of two major features:

- 3 unit course (Assessment and Instruction for Students with Early Reading and Spelling Difficulties)
- school collaboration to support teachers as they integrate the knowledge and skills learned in the course into their classrooms. The school collaboration included classroom visits, peer coaching, group discussions and interchange via e-mail and telephone.

Project RIME had three phases corresponding to the three years of the project.

1. During the first phase, the professional development model was created by planning the course and school collaboration program in coordination with the partnership site. Additional effective methodologies and technologies were integrated into the course. In addition, during this phase, the course was piloted and revised with preservice (graduate students in training) and inservice (teachers employed in schools), elementary and special education teachers.

2. During the second phase of the project, the course and school collaboration program were implemented and evaluated with elementary and special education teachers in one school in each of two school districts in Tucson and two schools in a rural school district near Sierra Vista as well as preservice elementary and special education teachers attending the University of Arizona at either the Tucson or rural Sierra Vista campus. Systematic evaluations of teacher and student learning and feedback from the participating teachers were used to evaluate the model and make further refinements. During this second phase, project staff coordinated their evaluation efforts with the Vermont partnership site, the Stern Center for Language and Learning. Initial findings from Project RIME were disseminated in several ways: at regional and national conferences, through the professional literature, via electronic communication, and other avenues within various professional organizations.

3. During the third phase of the project, the model was replicated with elementary and

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special education teachers in the two additional schools in the participating school districts in Tucson and another rural school district as well as with preservice teachers at the U of A's Tucson and Sierra Vista's campuses. During this phase, the course was taught in elementary schools in a third school district in Tucson and another rural district in Sierra Vista. The national scope of the project was expanded with the establishment of three national outreach sites where information from the model was used in the professional development and teacher education activities of the university/school partnerships. Mentoring to the national sites was through electronic networks and follow-up visits.

At the completion of this project, 140 primary and special education teachers and related service providers have participated directly in the model at the Tucson and Sierra Vista sites and developed competencies in teaching early reading and spelling to students at-risk for reading/learning disabilities. Through coordination with the national and partnership site in Vermont and dissemination efforts, over 1,000 teachers have participated in courses, workshops, and presentations focused on teaching early reading and spelling to at-risk students.

PROJECT STATUS

Each project goal is stated followed by a description of how each of the objectives was met.

1. **Evaluate materials, software, and programs designed to teach early reading and spelling.**

As specified by this goal, two annotated bibliographies were developed based on a review and evaluation of instructional programs, materials, and software in early reading and spelling. Since December, 1997, approximately 1,000 early reading and spelling programs, materials, and software programs have been reviewed for the purpose of developing two annotated bibliographies: one for instructional programs and materials and one for computer software and peripherals. The development of these bibliographies was completed gradually over the three years of the project.

For the first stage of the review process, the names of materials were collected from recommendations from teachers, teacher educators, and researchers in the field. The programs and materials were then located in catalogs and the catalog information was reviewed. This allowed us to see the breadth of materials and to determine appropriate criteria for the second stage of the process. After the initial stage, the criteria for inclusion in the bibliography were set to include materials and programs that related to teaching early reading and/or spelling that met the following criteria:

- could be applied to kindergarten through third-grade
- contained a phonics or phonological awareness component, which was defined as a continuum from rhyming activities to direct drill and practice of phonic generalizations.
- contained an orthographic component which emphasized word configuration or rapid identification of sight words
- provided a logical developmental sequence for instruction
- provided instruction that was systematic in terms of introduction of ideas/skills, opportunity for practice, and student interest and motivation

- could be implemented with relative ease in a general education classroom

During the second and third year of this project, we have continued to update these two data bases by adding new materials and programs. Project staff and inservice teachers have continued to use and evaluate programs.

At this point, the bibliography of computer software programs has 82 items, and the bibliography of instructional materials, programs, and activities has 106 items. These annotated bibliographies have been used in the class, were disseminated at the national site meeting, and are now being disseminated when individuals inquire about Project RIME. Both lists are also available on the RIME homepage: www.ed.arizona.edu/departs/SER/RIME.html

2. **Develop and implement a course on early reading and spelling interventions for at-risk learners.**

The objectives and activities associated with this goal have been successfully completed within the specified time line. A three-unit course SER 401a/501a Assessment and Instruction for Students with Early Reading and Spelling Difficulties was offered in the summer of 1997 at both the undergraduate and graduate levels. This allowed preservice teachers in elementary education to take the course (SER 401a) at the undergraduate level and preservice special education teachers and inservice teachers to take the course at the graduate level (SER 501a). The course was reviewed and approved and received permanent course status. In the 1998-1999 catalog, it appears as part of the approved special education curriculum in the Department of Special Education, Rehabilitation, and School Psychology.

The course has been designed so that students demonstrate:

- knowledge of the factors that affect early reading and spelling development
- knowledge of various assessments for the detection of early reading difficulties.
- knowledge of, and ability to apply, early intervention strategies that are most effective for young children with reading and spelling difficulties.
- knowledge of, and ability to integrate, these early intervention strategies into their existing curriculum.

Project RIME was based on current research documenting the importance of both teachers and their students understanding the structure of the English language. The most recent course syllabus is attached (see Appendix A).

In developing and revising the course, a wide array of books, articles, teaching materials, videos, and software were reviewed. More than 300 journal articles were reviewed and used in developing the foundation of the course content. Many of these articles were also used as course readings. In addition, we worked in close collaboration throughout the project with our partnership site, the Stern Center for Language and Learning, so that the course builds on, and is compatible with, the course being offered through that center. Recently Project TIME received refunding from a private foundation for an additional three years. At this point, over 600 Vermont educators have participated in this collaborative course.

During the year, additional videos of teachers implementing various early reading and spelling strategies were developed along with videos of children reading and writing. Writing and reading samples have been collected, so that the participants would have the opportunity to view and analyze "teachers and children in action."

The course was offered in the First Summer Session, 1997 on the University of Arizona campus in Tucson and at the rural University of Arizona site in Sierra Vista. Thirty-two preservice and inservice teachers participated in the course in Tucson and 18 teachers participated in Sierra Vista. This included kindergarten through third grade and special education teachers in two schools in Tucson and two schools in Sierra Vista. At these four schools participation ranged from 60% to 85% of the eligible teachers. In each course, 3 to 8 preservice elementary and special education teachers also participated.

The course was offered again in the First Summer Session, 1998, one on each campus site. In this second offering, two schools in Tucson and one school in Sierra Vista participated. At all three schools, 50% to 90% of the school's kindergarten through second grade teachers agreed to participate in the project. In addition, approximately three preservice elementary education students at each site and seven preservice special educators focusing on educating students with learning disabilities completed the course and the evaluation measures.

The third offering of the course was in the Spring Session, 1999. Teachers in a school from another school district in Tucson participated with 90% of the school's kindergarten through third grade teachers taking the course. In addition, two special education teacher assistants and the two reading teachers participated as well as the itinerant teacher for students who are deaf/hard of hearing. The course was also offered to the K-2 and special education teachers of the school in another rural school district at the rural University of Arizona site in Sierra Vista. At this school two special education preschool teachers also attended as well as two ESL specialists and the reading specialist. The Title I specialist had participated in Project RIME the previous summer.

Overall, approximately 150 teachers and related specialists participated in the course across the three years of the project.

3. Develop and implement a school collaboration program to support participants.

The school collaboration program was developed and designed to complement the course and build upon the importance of providing teacher-participants opportunities to explore and integrate learning in a supportive environment. For elementary and special education teachers in the participating schools in Tucson and Sierra Vista who took the course during the summer, the school collaboration occurred during the school year that followed the summer course.

The school collaboration was adapted from the mentor model used by Project TIME, our partnership site (Podhajski, 1999). Throughout the project, Project RIME and Project TIME staff continued to collaborate on strategies for facilitating the teachers and strengthening the program. The school collaboration was composed of: (a) classroom collaboration in which project staff observed and collaborated with the teachers as they taught, and (b) school study and support meetings in which teachers and project staff convened to study, share ideas, and problem solve regarding individual students. Current research documents that this type of collaboration (a) assists teachers in implementation, (b) promotes an interchange of information, and (c) results in improved student performance (Bos, 1995; Gersten, Morvant, & Brengelman, 1995; Richardson, 1994).

For the classroom collaboration each teacher in the participating schools worked with a member of the Project RIME staff. These RIME staff members had various backgrounds including expertise in speech/language pathology, early literacy, learning/reading disabilities, and bilingual special education. Each collaborator worked in the classroom assisting with various activities. These ranged from teaching/modeling an instructional strategy or lesson with the class, small group, or individual student; informally assessing students for whom the teacher had particular concerns; assisting the teacher as he or she taught; or observing a lesson/activity. After working in the classroom, the teacher and the staff member would meet to discuss what had transpired and develop an action plan. Project RIME staff members also aided teachers by sharing information and materials and assisting teachers in locating resources. The RIME staff members worked with the teachers in their classrooms at least once a month. At the beginning of the year meetings were bi-monthly for teacher/collaborator teams and staff members met with the teachers or brought them materials on a more frequent basis when necessary.

Monthly professional study and support meetings were held in the participating schools. Generally, the one-hour meetings consisted of time for sharing new information (e.g., articles, materials, software), teachers presenting individual student case studies, follow-up on previously presented case studies, and planning for the next meeting and other activities.

During both the classroom collaboration and during the study and support meetings, an emphasis was placed on sharing of ideas and professional dialogues. These types of dialogues appear to be important for improving the quality of early literacy instruction with students at-risk for reading failure (Englert & Tarrant, 1995; Gersten, et al., 1995).

For each school, the first collaboration meeting was held at the end of the summer course. At this meeting, goals and meeting times were set. The second meeting was held at the beginning of the school year. Both classroom collaboration and monthly study and support meetings occurred throughout the school year. As collaborators, Project RIME staff were involved with the teacher-participants through the following activities:

- individual professional dialogues
- individual observation, teaching, co-teaching, and problem solving
- reflective journals and responses
- electronic communication
- monthly group study/support meetings
- group problem solving discussions on individual students during monthly study/support meetings

During interactions with teacher-participants, the collaborators took field notes, audio taped, and video taped when appropriate. Collaborators visited classrooms to co-teach, teach in small groups, and provide demonstration lessons when requested. Collaborators also worked with individual and small groups of students identified as at-risk to facilitate early reading and spelling development. Visits occurred on the average of one time per month. Teacher-participants were provided with a wide-range of materials and resources to augment their early literacy instruction with their students. (See Appendix B)

Teacher-participants kept track of the activities and lessons implemented with their students that supported the development of phonological awareness and other early literacy activities. They used "activity sheets" developed by the Project RIME staff to record these

activities for one typical week per month. (See Appendix C) Teacher-participants were also asked to select two at-risk or struggling students to follow throughout the school year. These students were the focus of individual case studies shared during monthly study/support meetings. Action plans for struggling students were developed both individually with teacher-participants and during group study/support meetings. Lastly, teacher-participants wrote three reflective journal entries using guided questions, and participated in three professional dialogues that clarified and expanded upon information recorded in the journal entries.

Across the three years of the project, six Project RIME staff facilitated the school collaboration. Approximately 60 teachers and specialists from schools in Tucson and three schools in Sierra Vista participated in the collaboration. All were elementary schools that served at least the K-3 grade range. School ranged in size from 309 students to 643 students. All schools had minority students populations of 25% and ranging from 27% to 54% with the largest minority group represented being Hispanic. The percent free/reduced lunches ranges from 31% to 84% (M = 51%). The earliest versions of the course syllabi, one from each Tucson and Sierra Vista site, are included in this summary (see Appendixes D and E).

4. Evaluate the efficacy of the course and school collaboration.

The fourth objective of Project RIME was to evaluate the impact of the professional development on the K-2 and special education teachers and other professionals. We were interested not only in learning whether teachers' attitudes and knowledge changed as a result of the professional development, but also how teachers integrated this information into their teaching. We wanted to understand what the teachers viewed as valuable for their own professional growth and what they viewed as challenges to implementation. We were also interested in how the teachers evaluated the course and the school collaboration and the impact of the professional development on student learning and progress. We collected evaluation data on all teachers who participated (i.e., took the course Years I, II, and III) in terms of the change in teacher attitudes and knowledge prior to and after taking the course. Course evaluation information was also obtained.

Evaluation Design

Since our goal was to evaluate the entire model (course and school collaboration) we used a nested design in which we collected a complete set of data (i.e., teacher knowledge, attitude, and implementation measures; course and collaboration evaluation measures; student learning measures) on the teachers who participated at the four target schools. This evaluation was designed so that two schools participated in the professional development during the second year of the project and two schools served as wait-listed controls, therefore resulting in a two group design (intervention vs. comparison). During the third year of the project, we used a repeated measures design in which the control schools served as their own comparison. For each year, a small number of teachers were selected as case studies with whom additional data and classroom observations, professional dialogues, interviews, and interactive journals were collected and analyzed. The design for End of Year I-II and Year III with the data collection schedule is presented in Table 1.

The use of this design allowed for the evaluation of the model for two years using both between and within group designs. For each year, a nesting procedure was used in that selected teachers served as case studies. Across the three years of the project, the resulting evaluation moved from

Table 1

Evaluation Design for Year I-II and Year III with Data Collection Schedule

Groups	End of Year I – Year II				Year III		
	Pre-Course	End of Course/Beginning of School Year	Collaboration (During Academic School Year)	End of Academic School Year (End of Collaboration)	End of Course/Beginning of School Year	Collaboration (During Academic School Year)	End of Academic School Year (End of Collaboration)
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7
Professional Development (PD) Group	Assessment: ♦ Knowledge ♦ Attitudes	Assessment: ♦ Knowledge ♦ Attitudes ♦ Course Evaluation ♦ Classroom Implementation Questionnaire ♦ Student Learning	Intervention: ♦ Classroom Observations ♦ Interactive Journals ♦ Professional Dialogues ♦ Monthly Meeting Notes	Assessment: ♦ Knowledge ♦ Attitudes ♦ Collaboration Evaluation ♦ Classroom Implementation Questionnaire ♦ Student Learning ♦ Teacher Interviews			
Comparison (Com) Group		Middle of School Year Assessment: ♦ Knowledge ♦ Attitudes ♦ Student Learning		Assessment: ♦ Knowledge ♦ Attitudes ♦ Student Learning	Assessment: ♦ Knowledge ♦ Attitudes ♦ Course Evaluation ♦ Classroom Implementation Questionnaire ♦ Student Learning	Intervention: ♦ Classroom Observations ♦ Interactive Journals ♦ Professional Dialogues ♦ Monthly Meeting Notes	Assessment: ♦ Knowledge ♦ Attitudes ♦ Collaboration Evaluation ♦ Student Learning ♦ Teacher Interviews

a broad brush providing evaluation information regarding all teachers who participated in the course, to a more tightly controlled evaluation design which allowed us to systematically ascertain the effectiveness of the model, and finally, to case studies which provided rich information on implementation and the strengths and weaknesses of the model.

Measures

Teacher, course and collaboration evaluation measures, and student learning outcomes served as the primary measures for this project..

Teacher Measures. Several quantitative and qualitative measures were developed and used to obtain information about the impact of the professional development on the teachers' attitudes, knowledge, and practices in early reading and spelling instruction. These measures included information regarding the teachers' attitudes and knowledge, their evaluation of the model, and their implementation of the methods and materials taught in the professional development course.

A measure of teacher attitude and a measure of teacher knowledge were developed, piloted, and validated (Bos & Mather, 1997). (See Appendix F.) The Teacher Attitudes of Early Reading and Spelling was adapted from an instrument developed by Deford (1985) and measures teachers' attitudes toward statements representing more explicit, structured language approaches in comparison to ones representing more implicit, whole language-oriented approaches. Teachers rated each of the items on a six-point Likert scale ranging from strongly disagree (1) to strongly agree (6). The initial factor analysis (n = 41) using principles components extraction and varimax rotation indicated that two factors emerged: explicit, structured language with an explained variance of 24%, and implicit, whole language with an explained variance of 16%. The instrument was reliable (Cronbach's coefficient alpha = .74).

The knowledge assessment, Structure of Language, is a 24-item multiple choice assessment that examined the teachers' knowledge of the structure of the English language at the word and sound levels. Items for this measure were adapted from Lerner (1997), Moats (1994), and Rath (1994). In our initial field test (n = 55), item-test correlations ranged from .21 to .63 with an overall reliability of .83 (Cronbach's coefficient alpha).

For the professional development group, the attitude and knowledge measures were collected prior to taking the summer course, at the end of the course, and the following spring at the end of the school collaboration. For the comparison group, these measures were collected twice, at the beginning and end of the same year in which the professional development teachers participated in the course and the school collaboration.

In addition to these measures, qualitative measures were used to document further the impact of the professional development. During the course teachers kept reflective journals in which they wrote about what they were learning. During the collaboration, teachers also kept reflective journals that were used as a springboard for discussion with their collaborators. For one week each month they kept records of the early reading and spelling activities/lessons they used in their classrooms. Collaborators documented their classroom visits using a collaboration

form that noted the focus of instruction and the type of support given (see Appendix G). In addition, field notes were taken at the monthly meetings. Finally, follow-up interviews were given to selected teachers to obtain further information about how these teachers integrated the knowledge and strategies into their teaching, how they perceived the professional development had influenced their teaching, and what barriers they felt existed to implementation.

Course and Collaboration Evaluation Measures For the course evaluation, teachers rated the course in general, its relevancy to their professional development, the format and teaching style, the readings, and assignments using a five-point Likert scale (see Appendix H). This scale was used with the following judgement ratings: (1) not valuable, (2) valuable, (3) somewhat valuable, (4) very valuable, and (5) extremely valuable. Teachers also rated whether to increase emphasis, keep the same emphasis, or decrease emphasis on the major content areas. For the school collaboration evaluation, teachers rated how effective the internship was in facilitating learning more about teaching early reading and spelling, integrating the information into their teaching, the overall usefulness of the activities presented and the RIME Project (see Appendix I). Two scales with the following judgment ratings: very effective to ineffective and very useful to not very useful.

Student Measures. Although the focus of this summary is primarily on teacher perceptions and outcomes, measures of student learning were collected on the teachers' students. Results from four group assessments were collected at the beginning and end of the school year. These measures included an informal test of letter/sound knowledge, as well as three measures from the *WJ III Achievement Tests* (Woodcock, McGrew, & Mather, in press). More in-depth information concerning the measures and the student learning outcomes are reported elsewhere (Bos, Mather, Babur, & Rhein,1998). For the Sound Identification measure, students were asked to produce the most common sounds for the 26 letters of the alphabet. Letters were presented in both lowercase and uppercase.

The other three measures were from the *WJ III Achievement Tests* and were adapted to be administered in a group format. The *Spelling Test* measures the ability to write the correct spellings of words presented orally. The initial items involve beginning writing skills, such as drawing lines and writing letters. In the next section, the student is asked to spell words that increase in difficulty. The *Spelling of Sounds Test* measures aspects of phonological and orthographic coding. The task requires spelling nonsense words that conform to conventional phonics and spelling rules. The initial items require the individual to write the sounds of single letters. In the next section, the person is asked to spell letter combinations that are regular patterns in English spelling. The purpose of this test is to assess phonological coding skills, as well as sensitivity to English orthographic patterns. The *Reading Fluency Test* measures reading speed. The task requires reading and comprehending simple sentences rapidly. The student is presented a series of simple sentences and must read each sentence and then decide whether or not the statement is true or false by marking "yes" or "no." The difficulty level of the sentences increases gradually. The subject attempts to complete as many items as possible within a 3-minute time limit.

Participants

Within the nested design, fifty-five teachers and related professionals volunteered to participate in the professional development program. From this group, 11 teachers were selected for outcome measures for this summary because they were from the two schools in which student learning measures were also collected. The group was composed of seven kindergarten through second grade teachers, two special education teachers, one English as a second language teacher, and one remedial reading teacher. Ten teachers were Anglo, and one was Hispanic. Six of the teachers had Bachelor's degrees; five had Master's degrees.

A group of 17 teachers from two schools formed the comparison group. As noted in table 1 these teachers completed teacher assessment measures. Although they were not participating in the professional development, student learning measures were collected for their students at the beginning and end of the school year. These comparison schools were selected because each was similar to one of the professional development schools with regard to district curriculum standards and practices, student SES, and student ethnicity. The comparison group had 15 kindergarten to second grade teachers, one speech/language pathologist, and one remedial reading teacher. Fifteen teachers were Anglo and two were Hispanic. Twelve of the teachers had Bachelor's degrees; five had Master's degrees.

Two primary teachers and one remedial reading teacher from one of the participating schools were selected for more in-depth analysis to gain a clearer understanding of how teachers integrated the information, the challenges they encountered, and the impact on their professional growth. These teachers were all actively engaged in the collaboration process and were selected for their varied backgrounds and job roles. Becky, a second-grade teacher, was in her second year of teaching and perceived herself as a relatively novice teacher. Her undergraduate preparation emphasized whole language, and during the course she commented, "I'm feeling very overwhelmed right now, but enthusiastic. I have a lot to learn about reading and spelling (theory, practice, and teaching)." Maria, on the other hand, was an expert teacher of 30 years who had extensive preparation in teaching early literacy, including being trained as a Reading Recovery teacher. Maria perceived herself as eclectic in her instructional approaches. She reflected: "At the same time every approach should include making the children aware of using, graphophonic, syntax, and semantic cues. Helping all children to use reading strategies gives them a system to help themselves become better readers whenever they read." Monique, with an elementary education bachelor's degree, was in her twelfth year of teaching as a remedial reading teacher. She commented at the beginning of the program: "As a lower quartile teacher I work with 50-70 students school-wide who fall into this category. I do a lot of phonics but I'm not always sure where to start or if I'm really making a difference." These comments illustrate the varying teachers' perspectives.

Evaluation Outcomes of the Teachers

To address the impact of the model, findings on the teachers' attitudes and knowledge in the professional development group are compared across time and to teachers in the comparison group. Teachers also evaluated the course. To understand further the impact of the professional

development, the reflection journals, classroom observations, activity/lesson records, and follow-up interviews for Becky, Maria, and Monique were analyzed.

Teachers' Attitudes and Knowledge. For the professional development group, total scores for the teachers' attitudes for the explicit, structured language factor and the implicit, whole language factor as well as for the knowledge assessment were each analyzed using a repeated measures analysis of variance (ANOVA) in which pre-course, post-course, and end of collaboration were used as the measurement times. Results on the explicit, structured language factor indicate a significant effect for time [F (2,20) = 13.4, p = .002]. Post hoc comparisons were computed using the Bonferroni correction setting p at .017 to maintain a family-wise alpha of .05 (Kleinbaum, Kupper, Muller, & Nizam, 1998). Results indicated that teachers became more positive about their attitudes toward explicit, structured language instruction from pre-course to post-course (t = 4.80, p < .0001). See Table 2 for means and standard deviations. This positive attitude was evident at the end of collaboration in that there was no significant difference between the post-course and the end of collaboration (t = -.72, p = .48). Additionally, the teachers' attitudes about explicit, structured language continued to be more positive than before taking the course (t = 4.08, p = .001). Using a one-way repeated ANOVA for the comparison group, the difference was not significant for scores from pretest to the end of the collaboration year [F (1,16) = 4.25, p = .056] although it approached significance.

On the implicit, whole language factor there was no significant change in attitude for either the professional development or the comparison group. For the professional development group, the main effect for time was F (2,20) =.76, p = .43. For the comparison group, the main effect for time was F (1,16) = .26, p = .62. While teachers gained a more positive attitude toward explicit instruction with at-risk learners, they maintained their positive perceptions of more implicit, holistic methods.

The knowledge assessment focused on teachers' knowledge about the structure of the English language. For the professional development group on this assessment, the results indicate a significant effect for time [F (2,20) = 16.4, p = .0001]. Post hoc comparisons indicate a significant increase in knowledge (t = 5.4, p < .0001) from pre-course (M = 14.91, SD = 4.5) to post-course (M = 19.18, SD = 2.9) with no significant decrease (t = -1.16, p = 0.26) from post-course to the end of collaboration. (M = 18.27, SD = 2.9). There was a significant difference between pre-course to the end of collaboration (t = 4.28, p < .0001). These results indicate that teachers did gain significant knowledge during the course and continued to retain the same level of knowledge at the end of collaboration. For the comparison group, there was no significant difference in knowledge [F (1,16) = 4.35, p = .053] from pretest (M = 13.94, SD = 3.1) to the end of collaboration (M = 15.12, SD = 3.02).

Table 2

Means and Standard Deviations (in Parentheses) on the Assessment of Teachers' Beliefs About Implicit Whole Language and Explicit Structured Language for the Professional Development and Comparison Groups for the Year I-II Study

Group	Factor	Pre-Course (Time 1)	Post-Course (Time 2)	End of Collaboration (Time 4)
Professional Development (PD)	Implicit Whole Language	4.39 (.4)	4.56 (.5)	4.51 (.4)
	Explicit Structured Language	4.78 (.5)	5.44 (.2)	5.34 (.5)
Comparison (Com)	Implicit Whole Language	4.47 (.5)	NA	4.52 (.4)
	Explicit Structured Language	4.71 (.5)	NA	4.90 (.4)

Course Evaluation

To evaluate the course, the 11 professional development teachers were asked to rate the value of the course from not valuable (1) to extremely valuable (5). Their mean rating for the overall course was 4.7 (SD = .5). They also rated various aspects of the course including: (a) effects of the course on their professional development (M = 4.5, SD = .7), (b) format and teaching style (M = 4.6, SD = .5), (c) materials shared (M = 4.3, SD = 1.2), and (d) assignments (M = 4.1, SD = .9). Overall, the course was consistently rated as very valuable to extremely valuable.

For each major content area covered in the course, teachers were asked to rate whether they would increase, keep the same, or decrease the emphasis. Most teachers (> 75%) suggested the same emphasis for the topics that focused on describing the students or the concepts related to teaching phonological and orthographic awareness and early reading (i.e., student characteristics, research advances, concepts on phonological and orthographic processing, alphabetic principle). However, a substantial proportion of teachers (> 25%) suggested increased emphasis for topics addressing assessment and instructional strategies, and greater than 50% recommended an increased emphasis on methods for classroom integration.

Teachers' journal comments substantiate the value of the course for their professional development. For example, one teacher wrote: "Throughout the course I've thought of specific students I work with and what particular methods may work with them. One student has come to mind numerous times. He would benefit greatly from instruction in phonological awareness. My only frustration is that I didn't know these strategies sooner." After the course session on the relationship between speech sounds and spelling, one teacher wrote: "I thought prior to today that spelling was taught as an exercise to allow children to memorize. I now realize that I need to

change my spelling methodology" so that students learn about letters and sounds. Another teacher wrote: "I now understand how phonemic development relates to spelling. Before I would look at the writing and make some general assumptions. Now, I know more of what is going on in the child's head and what I need to do specifically to address their needs."

One shared concern was that the teachers wished that they had received this type of information in their preservice training programs or earlier in their teaching career. At the course conclusion, one teacher wrote: "This course should be a required teacher preparation course for all primary teachers. All teachers should have access to this wealth of information and ideas. The children are the ones in the end who will benefit and that's what it's all about."

Impact of from the Teachers' Perspective

To better understand the impact of the professional development, the reflection journals, classroom observations, activity/lesson records, and follow-up interviews for Becky, Maria, and Monique were analyzed using categorical and theme analysis (Spradley, 1979). Categories that emerged from this analysis included change in practice, integration of strategies into teaching, challenges to implementation, professional growth, and collaboration.

All three teachers changed their practices in teaching early reading and spelling and subsequently gained insight into their teaching. For example, Monique, the remedial teacher, reflected on her increased insight and knowledge about students' miscues, "Now I focus more on the way the students attack unknown words, for instance. . .before I helped them sound it out or would say lets look at the picture. . .[but now I see] that they are missing all unvoiced [consonants]. I am looking more at the way and the type of errors that they are making and I am more able to problem-solve. . . and really pinpoint how to help." Becky, the novice, whole language-oriented teacher, consistently used Making Words in her classroom. In her follow-up interview she notes, "Making Words is one of the most powerful things I learned this year. It's pretty easy and teacher friendly. We can use it in a small or whole group. I can pair kids by the same level or a different level." Maria, the expert teacher, became more cognizant of how the text type (e.g., patterned language, sight word, phonic/linguistic) can support readers as they generalize sound/symbol relationships to their reading. Maria was concerned that her at-risk students were not generalizing their new knowledge concerning word families and sound/symbol relationships to their reading, yet she was consistently having them read simple patterned language or sight word books that did not provide the abundant opportunities for practice of their new learning. Working with her collaborator, she began using phonic and linguistic readers to provide initial, intensive practice, and then transitioned to more controlled sight word readers and patterned books. In reflecting on this practice, she commented, "I am very familiar with Reading Recovery book levels and find it valuable. However, I had not thought as much about the type of text. I can now see that this is an important consideration for my students' success in reading." This type of professional development supported teachers' practices while also allowing them to expand and fine tune them. For example, Monique's instructional practices already included a strong focus on teaching phonics. The program, however, enhanced her instruction, as evidenced by classroom observations and her comments: "[before] I would just pull materials out that I had. And this year I was much more systematic." Monique then

discussed in depth the logical sequence that she developed for her lessons on reading strategies, vowel teams, and long vowels.

Becky, Maria, and Monique also reported challenges to implementation that are consistent with those often cited in the literature (e.g., Griffin, 1986; Hargreaves, 1997; Schumm & Vaughn, 1995). Maria, like many teachers participating in professional development, was positive about implementation during the beginning of the program, was less positive as she encountered time, materials, and human resources barriers associated with implementation, and in the end again became more positive. This was reflected in her rating of the statements, "Knowing what I now know about these strategies, I feel like I have enough time and energy to learn more about them and try them out in my classroom" and "These strategies will work/are working in my classroom," which were rated "mildly agree" at the beginning of the year, "mildly disagree" at mid-year, and "agree" by the end of the year. Becky also commented about lack of time and number of students: "The different levels of students is always the tricky part. And having 28-32 students this year. I need to fit in time for more small groups . . . and one-to-one instruction; there are kids that really do need one-to-one." Monique wrote in one journal entry, "The fact that I had too many students at one time in my classroom is a problem. I didn't have space and I didn't get around to all students to give them individual attention."

These teachers consistently described their professional growth and the integration of new knowledge with their personal knowledge. Monique wrote, "I have always thought that phonics was the way to go, but I never felt that I had the back-up. This class gave me more ideas and it let me understand more. I already knew phonics instruction was good and that it should be done. But I never really knew how to teach it. . . and I never knew the sequences and the patterns and the speed. And even when we did linguistics they didn't teach you how to teach it. Or teach you the sequences to teach it in . . . this project gave me the opportunity to expand what I already knew." Similarly, Becky said: "There is just more awareness and bringing out strategies. A lot more than what I've done before. There's definitely more purpose. I mean there was always a purpose but now its also learning the vocabulary for myself. I'm still teaching a lot of the same things, but I really believe it's the awareness behind it which helps me." Becky commented specifically about teaching poetry, "Last year I was teaching poetry because I noticed it helps with syllables. So, I'm going to continue to teach poetry in that way, to bring out the strategies of spelling, syllables, chunking, and reading. I'm just more aware!"

One of the outgrowths of the professional development was the collaboration that occurred between the teachers within each school. Monique, the remedial reading teacher, recounted: " I think that teacher collaboration helped me connect with the classroom teachers. I feel that this is the first year that teachers have taken an interest in what I do and it's also nice to know that the teachers are having the same problems and successes with the students that I have." Another teacher at the school observed during the summer course: "We are developing a true bonding situation this summer as a staff. The team building is so important." During a follow-up teacher focus group interview, the participating teachers at the school in which Becky, Maria, and Monique taught, consistently noted that this professional development project provided them with a common language, increased opportunities for sharing resources and problem solving about students, and resulted in better teaching and student learning.

Evaluation Outcomes of the Students

Students who were taught by the professional development teachers were assessed using several measures of early literacy at the beginning and end of the year and compared to the students in the classrooms of the comparison teachers. For each measure a two-way mixed design ANOVA was computed with time serving as the within factor and group as the between factor. Results are summarized in this article and presented in greater detail in Bos et al. (1998). Pre and post test mean scores and standard deviations on the different measures are presented by grade level (kindergarten, first, and second) in Table 3 with significant time x group interactions noted. So that a standard scale could be used across assessments, z scores were derived based on the pretest sample for each assessment at each grade level and converted to standard scores ($\underline{M}$ = 100, SD = 15). Results indicate that the kindergartners who worked with the professional development teachers made greater gains in sound identification, spelling of nonsense words, and spelling of real words than students in the comparison group. In first grade, this finding was evident for the spelling of nonsense words and real words. For the second grade, students taught by the professional development teachers made more gains across measures of reading and spelling than students in the comparison group.

Year III Evaluation Study

Participants

Within the nested design, fifty teachers and related professionals participated in the second year professional development program. Fifteen teachers from the larger cohort were selected for the second year study and completed teacher assessment measures. These teachers were chosen because they had participated in both the first-second year (as part of the comparison group) and the third year (as part of the professional development group) studies. The third year professional development consisted of the same program (e.g., course followed by school collaboration) as was given to the first-second year group. Similar to the first-second year study, this group of teachers was from the two schools in which student-learning measures were collected.

This group was comprised of 13 kindergarten through second grade teachers, one remedial reading teacher, and one speech/language pathologist. Fourteen teachers were Anglo and one was Hispanic. Eight of the teachers had Bachelor's degrees, while seven had Master's degrees.

Evaluation Outcomes of the Teachers

Teachers' Attitudes and Knowledge. The teachers' attitudes for the explicit, structured language and for the implicit, whole language factor, as well as their knowledge for language structure were assessed and analyzed by using a repeated measures analysis of variance (ANOVA). Measurements were collected across four different times. The teachers completed the first measurement midyear when they were in the comparison group. The other three measurements were collected as part of the Year III study during pre-course, post-course, and end of collaboration. (See Table 4 for means and standard deviations).

Table 3
Students' Pre- and Posttests Mean Scores by Grade Level on Assessment of Early Literacy

Assessment	Kindergarten				First Grade				Second Grade			
	Professional Development		Comparison		Professional Development		Comparison		Professional Development		Comparison	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Sound Identification												
M	91.6	115.8	93.5	108.4**								
SD	10.7	5.1	10.2	12.0								
n	19	19	46	46								
Reading Fluency												
M									92.5	109.4	90.6	103.0**
SD									12.8	15.2	12.1	15.2
n									30	30	54	54
Spelling of Sounds												
M	89.5	113.0	90.8	105.4**	95.2	109.0	95.2	101.0**	94.1	110.7	92.9	100.2**
SD	8.9	12.7	7.6	11.8	5.2	21.5	3.7	13.4	11.5	20.9	8.2	11.7
n	19	19	90	90	67	67	60	60	27	27	55	55
Dictation												
M	85.8	111.7	91.8	108.7**	93.4	115.1	81.3	107.6**	94.8	110.9	93.3	103.4*
SD	13.9	9.5	11.3	10.3	11.5	10.2	11.4	12.3	11.1	9.3	14.2	13.6
n	19	19	90	90	67	67	64	64	30	30	58	58

*Significant Time x Group interaction, $p < .05$. **Significant Time x Group Interaction, $p < .01$.

Overall, results of the explicit, structured language factor indicate a significant effect over time [F (3,42) = 31.02, $p < 0.0001$]. As in the Year I-II study, post hoc comparisons were computed using the Bonferroni correction setting p at .013 to maintain family-wise alpha of > .05 (Kleinbaum et al., 1998). These teachers showed no significant change in their attitudes toward explicit structured language from Time 2 to Time 4 (when they were a part of the Year I-II comparison group) ($t = 1.98$, $p > 0.55$). Their attitudes did, however, become significantly more positive from pre-course (Time 4) to post-course (Time 5) ($t = 6.45$, $p > 0.0001$). This positive attitude continued at the same level at post-collaboration (Time 7) as indicated by the finding that there was no significant difference between post-course and the end of the collaboration year ($t = -1.67$, $p > .104$). These findings were further substantiated by the significant difference found between their attitudes post-collaboration (Time 7) and pre-course (Time 4) ($t = 4.78$, $p > 0.0001$).

On the implicit, whole language factor, there was no significant change in the teachers' attitudes across four times. The main effect for time was F (3,42) = 3.07, $p > 0.0379$. Thus, as we had hoped, neither the course nor the collaboration year altered teachers' perceptions about the benefits of whole language for many students.

On the knowledge assessment (focusing on the teachers' knowledge about the structure of English), the results indicate a significant effect for time [F (3, 42) = 11.47, $p > 0.0001$]. . Means and standard deviations are noted in Table 4. Post hoc comparisons indicate a significant increase in knowledge from pre-course (Time 4) to post-course (Time 5) ($t = 4.64$, $p > 0.0001$). Teachers, however, scored significantly lower at follow-up (Time 7) as compared to post test (Time 5) ($t = -2.76$, $p > 0.009$). This indicates that these teachers grew significantly in their knowledge during the course, as was the case for the teachers in the Year I-II study. But they lost a significant amount of information during the collaboration year, a finding that is in contrast to the Year I-II study. In the Year I-II study no significant difference were evident for the professional development teachers between post test and follow-up

Table 4

Means and Standard Deviations (in Parentheses) on the Assessment of Teachers Beliefs and Knowledge Regarding Implicit Whole Language and Explicit Structured Language for the Professional Development Group for the Year III Study

	Factor	Mid-Year (Time 2)	Pre-Course (Time 4)	Post-Course (Time 5)	End of Collaboration (Time 7)
Beliefs	Implicit Whole Language	4.50 (.46)	4.53 (.48)	4.59 (.37)	4.78 (.36)
	Explicit Structured Language	4.66 (.52)	4.84 (.48)	5.46 (.32)	5.30 (.48)
Knowledge		14.27 (3.10)	14.87 (2.97)	18.67 (2.29)	16.40 (4.69)

Course Evaluation

As in the Year I-II study, teachers were asked to rate the value of the course from not valuable (1) to extremely valuable (5). This resulted in a mean rating for the overall course of 4.7 (SD = .65). Various aspects of the course were also rated including: (a) effects of the course on their professional development (M = 4.4, SD = .69); (b) format and teaching style (M =4.6, SD = .64); (c) materials shared (M = 4.54, SD = .65; and (d) assignments (M = 3.81, SD = .94). In summary, the course and the various aspects were consistently rated as valuable to very valuable.

Discussion

The overall findings suggest that teachers' viewed the professional development as valuable for their professional growth and learning, and that they became more positive in their attitudes, more knowledgeable, and more skilled at integrating explicit, structured language instruction into their teaching. Furthermore, teachers' comments, particularly from Becky, Maria, and Monique, support their professional growth and indicate that these teachers, like many teachers, are engaged in a balancing act that is fostered when intensive content (the course) is supported by on-going school collaboration.

Several factors indicate the efficacy of this professional development model. First, the course was evaluated by the participating teachers as "very valuable" to "extremely valuable" both in general and for their own professional growth. Teachers comments supported the notion that the course was interactive in nature and that it afforded teachers opportunities to weave their personal experiences and knowledge with external knowledge (Glatthorn, 1990) and assisted teachers in seeing relationships and connections among ideas and practices (Anders & Bos, 1992). Teachers= comments from the reflective journals regularly noted that their new learning informed current and past teaching practices (e.g., how spelling is not a memorization task; how phonemic development relates to spelling) and that this knowledge provided a springboard for change. Furthermore, the flexible, collaborative nature of the school collaboration provided teachers like Becky, Maria, and Monique with the on-going support to follow through and explore how this new knowledge can inform and change their teaching practices, regardless of their years of teaching experience. For Monique, the remedial reading teacher, this new knowledge and on-going support allowed her to "expand what I already knew," better understand the sequence for teaching phonics, and be "much more systematic" in her instruction. For Becky, it increased her awareness of what she was doing when she was teaching poetry and how to "bring out" in her teaching the related strategies of spelling, syllables, and chunking. For Maria, it allowed her to engage in a theoretically-based discussion about text type and add another dimension to how she thinks about the match between text and reader. In all three cases, these teachers took an active role in the change process (Gersten et. al., 1995) and greater ownership of the curriculum (Englert & Tarant, 1995).

Second, the teachers became more positive in their attitudes toward using explicit, structured language approaches to teaching early reading and spelling and their positive attitudes remained during the collaboration. Yet, these teachers remained relatively stable in their attitudes toward using implicit, whole language-oriented approaches. Our goal in this professional

development was not to have teachers replace one set of beliefs toward teaching early literacy with another. Rather, our goal was to make teachers more knowledgeable about researched-based ways of teaching early reading and writing to students at-risk of reading failure (IRA & NAEYC, 1998; Snow et al., 1998).

What was evident in the teachers' reflective journals, the interviews, and the classroom observations was their belief in the importance of providing instruction to meet individual students' needs. They acknowledged that to meet some students' needs more systematic, direct instruction in phonological awareness, phonics, sight word learning, and fluency would be a necessity.

Third, teachers' discrete knowledge of the structure of language increased during the time they took the course and for the Year I-II study was maintained during the school collaboration but not for the Year III study. The fact that this knowledge increased during the course was not surprising. Understandably, using this discrete knowledge and vocabulary was necessary while the teachers were engaged in the course. Particularly encouraging was the finding that the knowledge was maintained during the school collaboration for the Year I-II study. Evidence from the teachers' reflective journals, classroom observations, and collaborators' field notes indicated that professional dialogues did include use and application of concepts such as the components of phonological awareness (e.g., rhyming, blending, segmenting, sound manipulation) and different phonic elements (e.g., vowel digraphs, diphthongs, schwa). Furthermore, during interviews in the year following the on-going collaboration, the teachers continued to use this language and commented repeatedly how the collaboration contributed to the sharing of knowledge, and as a result facilitated student learning. We can speculate why this knowledge was not maintained in the Year III study, although it did increase in comparison to pretest ($\underline{M}$ = 14.87 at pretest and $\underline{M}$ = 16.40 at follow-up). We do have from classroom collaboration and professional development meeting field notes and observations that some teachers were less engaged in the professional development than in the previous year, particularly in one school. At this school, there seemed to be less use of common language during the support meetings and less on-going collaboration among teachers on this topic in comparison to the other three participating schools. This common focus and language has been suggested as a key element to teacher learning in professional development projects (Guskey & Huberman, 1995; Hargreaves, 1997; Richardson, 1994).

5. Extend the impact of model through national outreach sites and district support specialists.

National Outreach Sites

The following three national outreach sites participated in Project RIME: University of Texas-Austin, Bank Street College in New York City, and California State University-Los Angeles. The school partnership sites were: Austin Public Schools, New York City Public Schools, and Los Angeles Public schools, respectively. Two faculty from the university and one professional development/curriculum specialist from their local districts were asked to adapt and implement aspects of the professional development model at their sties. The three sites were selected for the quality and commitment of the faculty to the project, their current knowledge and

expertise in the area of early reading and spelling, their history of working successfully in university/district partnerships, and their geographic locations.

The national sites were confirmed early in the first year of the project. An e-mail distribution list was established and general information about each site and the associated faculty and district personnel was obtained. To facilitate implementation, assist us in understanding the sites and their needs, and provide information regarding the Project RIME professional development model and associated materials, a Project RIME National Site Meeting was planned and held in January 1998. Twelve designated national site members participated in the meeting the first week of January 1998 in Tucson. Materials developed for teaching the course and implementing the school collaboration component were reviewed and given to all participants. Several in-depth presentations were made. Dr. Blanche Podhajski, from Project TIME, our partnership site, provided an overview of their professional development project. Dr. Joe Torgesen, another project consultant, provided updated information regarding current intervention research in early reading from the NICHD studies. Dr. Sandra Wilde provided an overview of her work in spelling research and instruction. Each participant received a copy of her book, What's a Schwa Sound Anyway? This book provides a review of what general education teachers need to know about language structure. Participants discussed ways they could implement facets of Project RIME into their sites.

Written narrative evaluation data collected at the end of the meeting revealed that overall, the participants considered this a valuable experience and that they were able to envision how aspects of the project could be integrated into their current professional development and preservice teaching. The participants found particularly valuable the information on how to "present phonemic awareness activities in ways that would be acceptable to both top-down and bottom-up orientations" with concrete examples of how to do this. The materials were also viewed as "very clear and easy to incorporate into workshops, classes, or other types of staff development." However, the participants did view the time as "rushed," with a recommendation for more time spent on learning what other sites were doing and on more of the concrete, day-to-day programmatic information. For example, one participant suggested that it would have been helpful if the first grade teacher who presented would have "told us what a typical week's work of phonological awareness activities would look like." This participant was both a professional developer and acting principal within her school district and reinforced the need for direct application of information to teachers and their students. Finally, other recommendations focused on the need to put more emphasis on teaching culturally and linguistically diverse students who are at-risk for reading difficulties. This was not the major focus of Project RIME but is being directly addressed in our newly funded project, Project RIMES 2000.

National Site Teams developed Site Implementation Plans in January 1998. These implementation plans indicated that the model "in total" would not be replicated, but aspects of the model such as the school collaboration and the interactive style of teaching would be integrated and strengthened in their current teaching and professional development based on the model. Implementation plans also reflected that the materials provided would be incorporated into relevant preservice course work in reading and special education and in professional development conducted with practicing teachers.

From the time of the January 1998 national site meeting, project faculty have provided various levels of support to the faculty and professional developers at the sites with a range of one to three follow-up meetings held with the participants at each site. The support provided focused on the infusion and networking of new information and materials as they were developed by Project RIME, the sites, and other sources. Problem solving dialogues regarding the use of the various aspects of the model and professional development/preservice teacher preparation in general also took place during the meetings as well as phone and e-mail communication.

During the spring of the last year of the project (1999), each member of each site was asked to provide information regarding the implementation of the various aspects of Project RIME and its impact. Members were asked to provide information about which aspects were most valuable and to describe the scope of the professional development/teacher preparation activities and the approximate number of preservice and inservice teachers impacted. Summative evaluation data are provided for each of the three sites.

Texas Site. The Texas site originally included two faculty members from the University of Texas-Austin but was expanded over the three years to include other faculty working in this area (Drs. Sharon Vaughn, Jo Worthy, David Chard, and Alba Ortiz). The site also included the district coordinator for reading in Austin Independent School District (Terri Ross). Across the university and the faculty, various aspects of the project have been implemented, including:

- Selected information and materials have been integrated into relevant preservice education courses in elementary education, special education, and coursework taken by teachers working toward their reading specialist certification. This includes two courses which have ongoing tutoring of young struggling readers integrated into the coursework and competencies impacting approximately 120 students/teachers per year.

- Integration of selected teaching information and instructional activities developed and/or field tested by our participating teachers into the Texas Kindergarten Reading Academy developed by the Texas Center for Reading and Language Arts (TCRLA) at the University of Texas. This is a four-day workshop with on-going support in which over 20,000 kindergarten teachers in Texas will participate during the 1999-2000 school year.

- Integration of selected teaching information and instructional activities into the Texas First Grade Reading Academy which is currently being developed and should impact over 25,000 first grade teachers.

- Integration of professional development workshops conducted by AISD including workshops for reading specialists, pre-kindergarten and kindergarten teachers, and a trainer of trainers workshop on balanced literacy impacting over 250 personnel in the district

- Teacher measures were used as part of a large evaluation study in early reading.

California Site. The California site included California State University-Los Angeles and the Los Angeles Unified School District (LAUSD). Two faculty from CSU-LA (Drs. Diane Haager and Margaret Moustafa) and the Bilingual/Title I Categorical Program Coordinator (Celia Adams) at Harrison PK-8 School in LAUSD participated.

Aspects of the model have been integrated into preservice teacher education courses including the following:

- Approximately 200 students in special education and reading and professional development activities at Harrison School, with some participation of teachers at other Title I schools (about 60 teachers). Of all the sites, the model was most closely replicated at Harrison where Dr. Haager and Ms. Adams collaborated to initiate a professional development project for the kindergarten and first grade teachers that included an intensive workshop followed by school collaboration. Teacher study/support meetings were held weekly where the RIME problem solving and coaching formats were also used on a regular basis.

- National site members report that the handouts and readings were helpful for both the preservice and inservice and that the teacher assessments, student assessments, and school collaboration model was used in the professional development in the schools.

- Using the work with RIME as well as other work, Dr. Haager, Ms. Adams and their colleagues have recently been funded for five-year university/school partnership grant with an emphasis on reading and language arts.

New York Site. The New York site included The Bank Street College of Education and the New York City School System. Three faculty in special education and reading from Bank Street College participated (Drs. Helen Freidus, Mimi Rosenberg, and Claire Wurtzel). Persons involved in the school districts increased during the project as personnel changed roles and professional development educators joined Project RIME's New York site (Drs. Toni Bernard, Patty Fager, and Esther Friedman). Communication has been extensive via e-mail, telephone and letters with this site. Meetings with a RIME Project director were held in 1998 and 1999. The New York site has implemented several aspects of Project RIME in teacher education courses, professional development activities, and community outreach including the following:

- Faculty from Bank Street College and the New York site noted that the Project RIME concepts, materials, methods, and educational process for teachers have been orchestrated into instruction in literacy with their teachers and inservice graduate students. The developmental processes of growth, problem solving, and reflection for teachers regarding their students and reading and writing were attended to in the integration of Project RIME concepts and activities.

- More focus and clarity on phonics, phonological awareness and related skills are now a part of Bank Street College's reading and special education courses,

affecting over 200 teachers each year.

- Inservice courses for teachers in the New York City schools were developed and offered by Dr. Claire Wurtzel on phonological awareness for over 30 high school teachers.

- School collaboration workshops were provided by Dr. Toni Bernard for 18 Pre Kindergarten and Kindergarten teachers and paraprofessionals in Manhattan District 6, with follow-up school-based collaboration with 6 teachers in Dr. Esther Freidman's school.

- Over 30 teachers participated in courses and 12 in intensive professional development /school collaboration offered through the Center for Children and Technology and Bank Street College by Drs. Patty Fager and Esther Friedman in Manhattan.

- The distinguished speaker series at Bank Street College included a speaker related to phonemic awareness in 1998-1999.

- Teacher measures provided by Project RIME were used by two New York site faculty. Feedback was provided and data collected.

- Readings, videos, and other teaching materials from Project RIME were included in courses at Bank Street College of Education and in the inservice workshops provided by each of the faculty members of the New York site (over 350 teachers).

Members at each site identified barriers to implementation and sustainability. The California site members, with whom we had the least amount of regular contact, were the national site members who most closely implemented all aspects of the model. They reported that more initiated support from Project RIME staff would have been helpful. Several members at other sites indicated that more active use of the e-mail distribution list would have been helpful. Members also identified limited resources, time, and access to their teachers on an on-going basis as challenges in implementation. Another barrier was the need for more information, techniques, and activities for working with English Language Learners. All sites indicated that aspects of the project would be sustained in their sites. Most consistently reported were the teaching materials for workshops and courses on early reading and the teaching materials and strategies for teachers to use in their classrooms. From our data, it is clear that implementation and outcomes are related to several factors in schools and universities.

District Support Specialists

One of the greatest challenges in implementing a new project with outside funding and personnel resources is developing an interest and infrastructure within the participating school districts to ensure sustainability. In the two Tucson school districts as well as the Sierra Vista School District, one to three district support specialists were designated to work with the Project

RIME staff during the third year of the project and then to continue to support integration of the project into the school district after the outside funds have ended. The teachers selected had participated in the course and school collaboration and indicated an interest in this type of teacher-leader role. For the most part, those teachers selected were already in teacher-roles such as district professional developers, diagnosticians, program specialists, Title I reading specialists. Across the districts, five specialists have been identified, and the districts are providing approximately a 50% time commitment of personnel to work in this support position. While each district has developed its own plan, all districts plan to have these specialists provide a workshop-type course based on the RIME course to K-2 and special education teachers and then to provide on-going school collaboration. Each district plans to target one or two schools and the new teachers who joined the staff of schools that have already participated in the project. Substantial commitments have been made by Assistant Superintendents of each of the three districts toward the sustainability of the project in their districts. They have indicated that this is based on the positive evaluations that have been given by participating teachers and principals regarding the content and structure of the project and the positive effects it has had on student outcomes.

By working closely with district administrators and establishing district support specialists to provide on-going assistance to the teachers, the professional development model has become self-sustaining in the participating school districts.

6. **Disseminate information about the program and software and information about the professional development model.**

Information about Project RIME was disseminated in three major ways: (a) annotated bibliographies, education reports, and journal articles; (b) conference presentations; and (c) coordinated efforts with the partnership, district, and national outreach sites.

We have established a web site where information about Project RIME and the annotated bibliographies can be located. The RIME homepage, attached to the Department of Special Education and Rehabilitation home page, serves as a dissemination tool for the Early Reading materials and software that have been collected for evaluation. The information includes a description and means of contacting the producers of several dozen software packages and teaching aides. In addition, several links to related professional development resources have been included. This web site may be accessed at: www.ed.arizona.edu/departs/SER/RIME.html.

In relation to conference presentations and journal articles, we have made many information presentations and have written and are continuing to prepare several journal articles. Although the major goals are completed, we will continue to disseminate the project results through presentations, as well as journal articles.

We have made and will make the following presentations related to Project RIME:

Bos, C. S., Mather, N., Podhajski, B., & Gray, S. (1996, November). Projects TIME and RIME: Preparing early elementary and special education teachers in reading

instructional methods of efficacy. Poster presented at the annual meeting of the International Dyslexia Association, Boston.

Bos, C.S. (1997, October). Strategies for teaching reading and writing. Paper presented at the annual meeting of the Oregon Association for Children with Learning Disabilities. Portland, OR.

Mather, N. (1997, November). Myths that affect service delivery to individuals with reading disabilities. Session presented at the International Dyslexia Association, Minneapolis, MN.

Bos, C., Babur, N. Rhein, D., Sammons, J., Silver-Pacuilla, H., Hanna, B., & Eddy, J. (1998, March). Teaching Early Reading and Spelling: What We Know and Can Do. Workshop presented at the Arizona Council for Exceptional Children, Tucson, AZ.

Mather, N. (1998, March). What we know about early reading instruction but don't always do. Session presented at the International Learning Disability Conference, Washington, DC.

Bos, C.S. (1998, April). Successful Early Reading and Spelling: What We Know and Can Do. Paper presented at the annual meeting of the Council for Exceptional Children, Minneapolis, MN.

Rhein, D., Babur, N., Mather, N. (1998, October). Factors to consider in assessing phonological processing skills for reading. Session presented at Council for Educational Diagnostic Services (SEDS), Division of Council for Exceptional Children, Las Vegas, NV.

Mather, N. (1998, November). Informal assessment and instruction for students with difficulties in basic writing skills. Session presented at the International Dyslexia Association, San Francisco.

Bos, C., Mather, N., Babur, N., & Rhein, D (1998, November). Assessing phonological processing skills for reading. Poster presented at the annual meeting of the International Dyslexia Association, San Francisco.

Mather, N. & Bos, C. (1999, February). Interactive, collaborative professional development: Supporting teacher growth and collaboration through university/school partnerships. Paper presented at the annual meeting of the Learning Disabilities Association, Atlanta, GA.

Bos, C.S., Sliver-Pacuilla, H., & Penland, T. (1999, March). What works: Literacy and study strategies for teaching at-risk students. Paper presented at the Dean's Forum, College of Education, University of Arizona, Tucson.

Bos, C., Friedman Narr, R., & Silver-Pacuilla, H. (1999, May). Collaborating in Primary Classrooms to Promote Successful Early Literacy for At-Risk Learners. Session presented at the International Reading Association National Conference, San Diego, CA.

Silver-Pacuilla, H. (1999, May). Methods that work: Drawing from the special education literature for adults with learning difficulties. Session presented at the National Commission on Adult Basic Education Conference, San Diego, CA.

Bos, C.S. (1999, June). Teaching reading and writing: Effective practices for students with learning problems. Paper presented at the annual meeting of the Australian Resource Educator's Association, Brisbane, Australia.

Friedman Narr, R. (1999, June). An interactive collaborative professional development model. Invited presentation at the Supervisors Conference, Statewide Programs, Arizona Schools for the Deaf and Blind, Phoenix, AZ.

Friedman Narr, R. (1999, July). Developing phonological awareness especially with children who are deaf and hard of hearing. Poster Presentation at the Convention of American Instructors of the Deaf, Los Angeles.

Mather, N. (1999, October). Best practices in early reading intervention. Keynote address presented at the Nebraska Learning Disability Conference, Omaha, NE.

Mather, N. (1999, October). Early reading and writing intervention. New Jersey Branch of the International Dyslexia Association, Princeton, NJ.

Friedman Narr, R. (1999, November). Developing phonological awareness with children who are deaf and hard of hearing to promote literacy. Presentation at the ASHA, San Francisco.

Mather, N. Podjahski, B., & Silver-Pacuilla, H. (1999, November). Teaching early reading and spelling to at-risk students: Teachers' attitudes and effective practices. Session presented at the annual meeting of the International Dyslexia Association, Chicago.

Rhein, D., Mather, N., Bos, C., & Sammons, J.R. (1999, November). Assessing phonological processing skills for early intervention. Poster presented at the annual meeting of the International Dyslexia Association, Chicago.

Rhein, D., Babur, N., Mather, N. (2000, February). Best practices in assessing phonological processing skills for early instruction. Poster will be presented at the annual meeting of the Learning Disabilities Association of America, Reno, NV.

We have several articles related to the project that are published, in press, or in preparation.

Bos, C. S., & Mather, N. (1997). The nagging question: What works for students with severe reading disabilities? Journal of Academic Language Therapy, 1, 52-58.

Bos, C.S., Mather, N., Friedman Narr, R., Babur, N. (1999). Supporting professional development through university/school collaboration. Learning Disabilities Research and Practice,14, 227-238.

Bos, C.S., Mather, N., Silver-Pacilla, H., Friedman Narr, R. (submitted for publication). Supporting professional development through university/school collaboration. Teaching Exceptional Children.

Chard, D. & Bos, C. (1999). Introduction to special issue. Learning Disabilities Research and Practice, 14, 189-190.

Friedman Narr, R. (1999). Teachers of students who are Deaf and Hard of Hearing: Change in reading instruction through collaborative professional development. Unpublished doctoral dissertation, University of Arizona.

Mather, N., Bos, C.S., & Babur, N. (in progress). The beliefs and knowledge of elementary preservice and inservice teachers.

Roberts, R., & Mather, N. (1997). Orthographic Dyslexia: The neglected subtype. Learning Disabilities Research and Practice, 12, 236-250.

Silver-Pacuilla, H. (1999). "Patience, practice, phonics, and praise": Preservice teachers and the America Reads experience. Arizona Reading Journal, 25(3), 19-27.

In summary, dissemination efforts have informed well over several thousand educators of this work. In concert with the partnership and national outreach sites, we have assisted approximately 1,000 teachers in developing knowledge and competencies in the area of teaching early reading and spelling to students with disabilities and at risk of reading failure.

References

Anders, P. L., & Bos, C. S. (1992). Dimensions of professional development: Weaving teaching beliefs and strategic content. In M. Pressley, K. R. Harris, & J. T. Guthrie (Eds.). Promoting academic competence and literacy in schools (pp. 457-476). San Diego: Academic Press.

Bos, C.S. (1995). Professional development and teacher change: Encouraging news from the trenches. Remedial and Special Education, 16, 379-382.

Bos, C.S. & Mather, N. (1997). Project RIME: Reading Instructional Methods of Efficacy (Performance Report No. 2). Tucson: University of Arizona, Department of Special Education, Rehabilitation, and School Psychology.

Bos, C., Mather, N., Babur, N., & Rhein, D (1998, November). Assessing phonological processing skills for reading. Poster presented at the annual meeting of the International Dyslexia Association, San Francisco.

Deford, D.E. (1985). Validating the construct of theoretical orientation in reading instruction. Reading Research Quarterly, 20, 351-367.

Englert, C.S. & Tarrant, K.L. (1995). Creating collaborative cultures for educational change. Remedial and Special Education, 16, 325-336.

Gersten, R., Morvant, M., & Brengelman, S. (1995). Close to the classroom is close to the bone: Coaching as a means to translate research into classroom practice. Exceptional Children, 62, 52-66.

Glatthorn, A.A. (1990). Cooperative professional development: Facilitating the growth of the special education teachers and the classroom teacher. Remedial and Special Education, 11, 29-34, 50.

Griffin, G.A. (1986). Clinical teacher education. In J. Hoffman & S. Edwards (Eds.), Reality and reform in clinical teacher education (pp.1-23). New York: Random House.

Guskey, T. R., & Huberman, M. (1995). Professional development in education: new Paradigms and practices. New York: Teachers College Press.

Hargreaves, A. (Ed.) (1997). Rethinking educational change with heart and mind. Alexandria, VA: Association for Supervision and Curriculum Development

IRA (International Reading Association) & NAEYC (National Association for the Education of Young Children). (1998, July). Learning to read and write: Developmentally appropriate practices for young children. A joint position statement. Young Children, 30-46.

Hargreaves, A. (Ed.) (1997). Rethinking educational change with heart and mind. Alexandria, VA: Association for Supervision and Curriculum Development.

Kleinbaum, D.G., Kupper, L.L., Muller, K.E., & Nizam, A. (1998). Applied regression analysis and other multivariable methods. Pacific Grove, CA: Duxbury.

Podhajski, B. (1999, Spring). Helping teachers to help children learn to read. LD Matters, 7-9.

Richardson, V.L. (Ed.). (1994). Teacher change and the staff development process. New York: Teachers College Press.

Schumm, J.S., & Vaughn, S. (1995). Meaningful professional development in accommodating stduents with disabilities: Lessons learned. Remedial and Special Education, 16, 344-353.

Spradley, J.P. (1979). The ethnographic interview. Fort Worth, TX: holt, Rinehart, & Winston.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.) (1998). Preventing reading difficulties in young children. Washington, DC: National Academy Press.

Wilde, S. (1997). What's a Schwa Sound Anyway? Portsmouth, NH: Heinemann.

Woodcock, R.W., McGrew, K.S., & Mather, N. (in press). Woodcock-Johnson Tests of Achievement III. Itasca, IL: Riverside.

Appendix A

SER 401a/501a Syllabus

SER 401a/501a
Spring 1999

Assessment and Instruction for Students with Early Reading and Spelling Difficulties

INSTRUCTORS:
Candace Bos, Ph.D.....Educ. 417.....621-0938 cbos@u.arizona.edu
Nancy Mather, Ph.D.....Educ. 409.....621-0943 nmather@u.arizona.edu

LOCATION: J. Robert Hendricks Elementary School, 3400 W. Orange Grove Road
DATE & TIME: Tuesdays, January 19 - May 11, 2:30-5:00

COLLABORATORS:
Rachel Friedman, M.S.....RIME Office, Educ. 439e.....621-7893 rachelf@u.arizona.edu
Janice Sammons, M.A.....RIME Office, Educ. 439e.....621-7893 jsammons@u.arizona.edu

Department Secretary: Patricia Foreman.....Educ. 404.....621-3216 pforeman@u.arizona.edu

Description:

This course will provide teachers with both knowledge and strategies for teaching phonological awareness, word analysis, and spelling. Topics include assessment techniques, instructional strategies, and computer technology designed for children with early reading and spelling difficulties. The course will build upon current theory and research in learning disabilities and early literacy. In addition, this course will provide teachers an opportunity to apply their knowledge and skills in teaching at risk students early reading and spelling and to develop case studies to demonstrate their teaching competence with these students.

Instructional Methods:

Lectures, demonstration teaching, observations, discussions, small group learning activities, videos, and projects.

Course Objectives:

After the completion of the course, teachers will:

1. Demonstrate knowledge of theories and research associated with early literacy difficulties in students.
2. Demonstrate knowledge of and ability to use various assessments for evaluating early reading and spelling development.
3. Demonstrate knowledge of and ability to apply strategies for teaching young children with reading and spelling difficulties.
4. Demonstrate knowledge of and ability to integrate early intervention strategies into the general literacy curriculum.

Prerequisite Courses:

Completion of reading and language arts methods classes, TTE 322 and 323 (or similar courses at another University).

Course Assignments and Requirements:

	Attendance and participation (5%)	5
1.a	Adapted Making Words Activity (5%) OR	
1.b	Record One Book on Tape (Carbo Method) (5%)	5
2.	Informal assessment of early literacy performance (15%)	15
3.	Selection, description, and implementation of two instructional activities for increasing early literacy (15%)	15
4.	Developmental spelling analysis (10%)	10
5.	Adapted Names Test (10%)	10
6.	Case studies (2) including a portfolio for one of the selected students (15%)	15
7.	Reflective journal (15%)	15
8.	Articles critique (10%)	10
		100 points

Graduates: Complete all assignments.
Undergraduates: Complete all assignments with the following adjustments: Complete one informal assessment for Assignment #2, one instructional activity for Assignment #3, one case study for Assignment #6.

Grades: Grades will be based upon total points obtained from the assignments.

A = 90-100 points
B = 80-90
C = 70-80
D = < 70
Grade options will include the following: A, B, C, D, E, and I. Students who want to receive an Incomplete must have the majority of the course work and requirements completed, have permission of the instructor, and submit in writing to the instructor a time line for completing the Incomplete. A grade of Incomplete automatically changes to an E if not completed in one year.

Outline of Course Assignments

Assignment #1a: Adapted Making Words Activity
Due date: March 16
Prepare a one-page adapted Making Words type activity that uses between 3 to 5 letters. At the top of the page, list the letters needed, the words that can be formed, and any words that can be spelled using all of the letters. Provide a typed script to use with the lesson. For example: "This word says "tan." Change the /n/ sound to /p/. Now the word says....?" You may use letter names or letter sounds in your instructions. Bring 25 typed copies to class.

OR

Assignment #1b: Record One Book on Tape (Carbo Method)
Due date: April 27
Prepare (record) one read-along tape. For each tape:

Title: State the name and author of the book or chapter.

Purpose: State your objective for the lesson. Will your students be reading a novel or textbook? Will they be reading for pleasure or knowledge? (This will determine your approach.)

Materials: Provide cassette and book. Provide explanations, questions or activities you may include for students to enhance comprehension of the text.

Assignment #2: Informal Assessment of Early Literacy Performance

Due date: February 23

Complete the informal assessment distributed in class with two children between the ages of 4-9. For each child, write a brief summary of what the child is able to do and what areas should be targeted for instruction. Include any informative observations.

Assignment # 3: Selection, Description, and Implementation of Instructional Activities

Due date: April 27

After reviewing instructional materials, handouts, and readings, select (or design) 2 early literacy activities that you will be able to use in your classroom. For these two activities, develop the materials you will need. These may be large group, center, or individual student activities. For each activity:

Activity: State the name of the activity.

Purpose: Briefly state what the activity will teach students to do. List prerequisite knowledge or skills. List behaviors and concepts (e.g., print awareness, phonological awareness, oral language) that will be targeted or developed through this activity.

Materials: List and develop materials needed for the activity.

Description: Provide a brief description.

Adjustments: Describe briefly how the activity can be modified to address different levels of ability. How can you adjust the activity to include children with the most advanced skills, as well as children with the most limited skills?

Reflections: Use the activity and describe how it worked and if and how you would modify it

Assignment # 4: Developmental Spelling Analysis

Due Date: March 2

Review the Understanding English Sounds handout and then complete an analysis of the two children's writing samples provided. For each child, describe what the child can do, as well as the areas of difficulty. Note and discuss specifically the types of spelling errors made by the child. Develop three instructional recommendations for the child. You may work with a partner on this assignment.

Assignment #5: Adapted Names Test

Due Date: March 16

Administer the Adapted Names Test (to be distributed in class) to 3 students. Select students who will be able to read some of the names correctly.

Assignment #6: Case Studies

Due Date: May 11

Select two students who are struggling to learn to read or spell. For each student, collect information regarding the students' background, performance at the beginning of the case study, the activities and skills on which you focus your instruction during the semester, the students' progress, and the students' performance at the end of the case study. At the end of the semester you will turn in and discuss one case study.

Using the simple case study format provided in class record information on entry level performance, on student progress, activities, skills taught during the semester, exit level performance, and recommendations

for further instruction. Develop a portfolio including student work samples and observational notes. These work samples and notes will be used to evaluate student progress and to assess the effectiveness of the teaching strategies. During the last class sessions, you will be asked to discuss one case study. In a 5-10 minute oral presentation, discuss the child's difficulties, the effectiveness of any interventions, and the progress made. If possible, provide the group with pre- and post writing samples to analyze.

Assignment #7: Reflective Journal

Due Date: February 9; March 9; April 13; May 11

Throughout the course we would like you to keep a reflective journal. Please write an entry for each day of the course (about ½ page). Write about any insights, ideas, or reactions to what you are learning in class, as well as the readings. Discuss if and how your knowledge and beliefs about early reading are being confirmed and/or are changing. Discuss how you are using ideas from the course with your students. You may discuss: your beliefs and knowledge about teaching reading and writing, what you think about the methods and strategies, as well as questions you have based on class discussions or your readings. Briefly discuss how you plan and are implementing certain procedures and methodologies into your curriculum.

Assignment #8: Critique of Readings

Due date:

For each article in the packet, note whether or not you thought it was worthwhile and should be kept as a reading. Do not write more than 2-3 sentences. Use the Critique of Readings list (3 pages) provided at the end of the Table of Contents and mark an X in the right-hand margin to record your recommendation. For example:

	Keep/Discard
I thought this was useful because it helped me to	X
I did not find this article very helpful. It seemed that many of the guidelines were common sense and	X

Daily Schedule

1. January 19: **Setting the Stage: A Balanced Approach to Early Literacy**
   - Introduction to Project RIME
   - Course Overview
   - Interventions for at-risk readers
   - Holistic and structured reading methodologies
   - Developmental differences
     - Video: Three first-grade students writing (Delphine's class)
   - Components of language
   - Spelling Analysis Activity
   - Definitions: Phoneme, phonological awareness, orthographic awareness
   - Double and triple deficit hypothesis
   - Role of phonology and orthography in early reading achievement
   - Research and theory in development of early reading and spelling skill
   - Early risk factors
   - Explanations of dyslexia

2. January 26: **Phonological Awareness: Preschool and Kindergarten**
   - Development of early reading
   - Alphabetic Principle
   - Rhyming

Sequence of skill development
- Sound discrimination
- Sound production
- Isolating initial and final sounds
- Blending
- Segmentation
- Deletion
- Manipulation (substitution, transposition)

Activities to build phonological awareness
- Video: Sound Start
- Sample activities from Ladders to Literacy
- Video: Sounds Abound

3. February 2: **Phonological Awareness: First and Second Grade**

Classroom interventions
Teaching blending and segmentation:
- words
- syllables
- phonemes

Integrating phonological awareness activities into the curriculum
- Phonemic Awareness books

Video: Zoo Phonics

4. February 9: **Assessment of Phonological Awareness: Standardized and Informal**

Test of Phonological Awareness (TOPA)
Screening for Early Reading Processes Test
- Video: Danny taking the SERP

Assessment video (Rapid Naming)

3:30-5:00 Guest Speaker: Dave Betts, Phonological Awareness and Early Reading Software Programs

5. February 16: **How Speech Maps to Print**

Phonemes, graphemes, and morphemes
Video: Kathie Newton rhyming to Print
Understanding English sounds
American English consonants
- Voiced and voiceless consonant cognates

Speech sounds and spelling
Vowel circle
Spelling and articulation

6. February 23: **Spelling Development and Assessment**

Stages of Spelling Development
Defining "invented spelling"
Moving from temporary to conventional spelling
- Video: Jon Early Writing Development

Analyzing spelling development
Understanding spelling rules

Administering and scoring developmental spelling inventories
Tangel-Blachman
Video: Ben, Daniel, Jon
Ganske (DSA)
Practice scoring the DSA

7. March 2: **Moving from Speech to Print**

Adapted Elkonin procedure
Magnetic Letters
Video: Dan
Sound sequencing
Onset-rime activities
Video: Three first-graders writing over time
Making Words: Demonstration with video
Sequencing of lessons
Adaptations
Adapted Names Test

8. March 9: **Issues in Beginning Reading and Reading Development**
History of reading instruction
Continuum of reading methodologies
The Reading Controversy
Popular Press
Video: California Reading Initiative
Instructional level
Use of technology
Matching the type of text to the learner

Models of reading development:
Chall
Spear-Swerling & Sternberg
Case study activities

9. March 16: **Instruction in Decoding**
Structured language/literacy instruction
Basic principles of structured language programs:
direct-explicit
simple-complex
multisensory
Phonics programs
Synthetic and analytic phonics
Matching text to individual learners
Linguistic programs and word families
Video: Leslie Selgren r-controlled vowel lesson
Structural analysis
Six Syllable types
Guest speaker: Jane Haggerty
Glass-Analysis

MARCH 23: SPRING BREAK: NO CLASS

10. March 30: **Spelling Accommodations and Instruction**

Development of encoding skill
Accommodations
Flow list
Color coding
High frequency words
Sitton Spelling Program
Scholastic Spelling Program
Instruction
Multisensory methods

3:30-5:00: Dave Betts: Integrated literacy and spelling software

11. April 6: **Building a Sight Vocabulary**
Methods for assessing and building a sight vocabulary
Modified Language Experience
Fernald
Dolch Words with reading passage
High frequency words
SWAP procedure

12. April 13: **Methods for Increasing Fluency**

Choral reading, choral repeated reading
Video: Using a reading window (Motor Mouth)
Neurological impress
Paired reading
Taped Books
Carbo Method and Fluency

13. April 20: **Integration into the Curriculum**

Discussion of classroom implementation
Guest Speaker: Mary Steffenson, Integrating Word Analysis Activities into First Grade
Video: Ms. Ellen Hartline, First-Grade Workshops

14. April 27: **Sharing of Instructional Activities**

15. May 4: **Case Study Discussion**

16. May 11: **Case Study Discussion**

Appendix B

Bibliography of shared materials among collaborators

Bibliography of shared materials among collaborators:

Gersten, R., Morvant, M., Brengelman, S. (1995). Close to the classroom is close to the bone: Coaching as a means to translate research into classroom practice. Exceptional Children, 62, 1, pp. 52 – 66.

Marks, S. U. & Gersten, R. (1998). Engagement and disengagement between special and general educators: An application of Miles and Huberman's cross-case analysis. Learning Disability Quarterly, 21, pp. 34 – 55.

McAlpine, L. (1992). Learning to reflect: Using journals as professional conversations. Adult Learning, January, pp. 15, 23 – 24.

Morrison, K. (1996). Developing reflective practice in higher degree students through a learning journal. Studies in Higher Education, 21, 3, pp. 317 – 332.

Richardson, V. (1994). Teacher change and the staff development process: A case in reading instruction. Columbia University, NY: Teachers College Press.

Scherr, M. W. (1993). Reflected light: reflecting about teaching and learning. Teacher Education Quarterly, Winter, pp. 29 – 36.

Schumaker, K. A. (1993). A taxonomy for assisting teacher reflection and growth in reading instruction. (ERIC Document Reproduction Service No. ED 361 684)

Schumm, J. S. & Vaughn, S. (1995). Meaningful professional development in accommodating students with disabilities: Lessons learned. Remedial and Special Education, 16, 6, pp. 344 – 353.

Appendix C

Activities/Lessons

School _____
Teacher _____
Week of _____

Project RIME
SER 593/Staff Development
Activities/Lessons

Check ( ) those skills on which the activity focused.

Activities/Lessons	Rhyming	Blending	Segmentation[1]	Sound Manipulation[2]	Letter/ Sound Activities	Word Structure[3]	Sight Words	Integration into Reading[4]	Spelling Patterns	Spelling Demons	Integration into Writing[5]	Times per Week	Minutes per Week

BEST COPY AVAILABLE

1. Segmentation (e.g., word, syllable, sound levels)
2. Sound Manipulation (e.g., sound deletion, substitution, manipulation)
3. Word Structure (e.g., syllabication, prefixes, suffixes, endings, contractions, compound words)
4. Integration into Reading (i.e., application of skills while reading in context)

Appendix D

SER 593 Syllabus

SER 593
INTERNSHIP
IN EARLY LITERACY

INSTRUCTOR:
Candace Bos, Ph.D.

FACILITATORS:
Ellen Peguesse, M.Ed.
Rachel Friedman, M.A.
Heidi Silver-Pacuilla, M.A.

DATES: 9/15/97-5/1/98
LOCATION:
Walker Elem. School
Borman Elem. School
Palominas Dist.

Dates: 9-24-97 to 5-20-98
Units: 1

COURSE DESCRIPTION

This 1-unit internship provides graduate students (referred to as participants) with internship experiences that include: a) continuing to study and read the literature and research in teaching early reading and spelling, b) applying their knowledge and skills in teaching at risk students early reading and spelling, and c) developing case studies to demonstrate their teaching competence with these students. The internship will provide on-going support and supervision as teachers integrate into their classrooms knowledge and strategies presented in SER 501a Assessment and Instruction for Students with Early Reading and Spelling Difficulties. The internship will include monthly study meetings, classroom observations, peer coaching, group discussions, and interchange via e-mail and electronic communications. It will also provide opportunity for networking with teachers in other schools involved in building knowledge and skills for teaching early reading and spelling.

PREREQUISITE COURSE

Completion of SER501a: Assessment and Instruction for Students with Early Reading and Spelling Difficulties.

TEXT

Readings and texts used in SER 501a and additional readings based on the new literature and research contributed by instructors and students..

STUDENT OBJECTIVES

Teacher participants will demonstrate the following competencies:

1. Knowledge of and ability to use various assessments in early reading and spelling
2. Knowledge of and ability to apply strategies for teaching young children with reading difficulties
3. Knowledge of and ability to integrate early intervention strategies into the literacy curriculum

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each week, check the skills that were taught, and note the approximate number of minutes.

Case Studies and Student Portfolios

After becoming acquainted with the students in the classroom, the participants are to select two students who are at risk for reading failure. For each student, collect information regarding the students' background, performance at the beginning of the case study (in September/October), the activities and skills on which you focus your instruction during the year and students progress, and the students' performance at the end of the case study (April/May).

Using a simple case study format provide information on entry level performance, on student progress and activities and skills taught during the year, exit level performance, and recommendations for further instruction. Develop a portfolio including student work samples and observational notes. These work samples and notes will be used to evaluate student progress and to assess the effectiveness of the teaching strategies. The case studies and portfolios will be shared and discussed among participants and facilitators during classroom visits and group discussions on an "as needed" basis.

Reflective Journals

Reflective journals provide opportunity for thinking about the staff development and your teaching and learning. Journals also can serve as a dialogue between the participant and the university facilitator. The following should be considered when making journal entries:

- if and how the staff development meetings and classroom collaboration are supporting your integration of the assessment and teaching strategies into your teaching
- how students respond to the methods and strategies your are using
- questions generated by your work with the assessments and strategies
- questions about student progress, particularly your case study students
- reflections and feelings about the teaching/learning process

Journal entries should be made **weekly** and available for the facilitator to read and respond to during classroom visits or staff development meetings. Once monthly, select one lesson or activity and write about the following:

Describe the activity (Purpose, Materials, Procedures, Observations)

Comment on the following:

How did you feel it went?

How did the students do overall and how did your case study students do?

Did you encounter any problems?

If you did this lesson/activity again, what would you keep or change?

What will you do next?

What questions remain for you about this activity?

Appendix E

SER 593 Syllabus: Sierra Vista

SER 593 Course Syllabus
Internship in Early Literacy

Instructor:
Candace Bos, Ph.D.

Facilitator:
Heidi Silver-Pacuilla

Dates: 9/98 – 5/99
Location: Greenway Elem.
University Unit: 1

COURSE DESCRIPTION:

This 1 unit internship provides graduate students (referred to as participants) with internship experiences that include: a) continuing to study and read the literature and research in teaching early reading and spelling, b) applying their knowledge and skills in teaching at-risk students early reading and spelling, and c) developing case studies to demonstrate their teaching competence with these students. The internship will provide on-going support and collaboration as teachers integrate into their classroom knowledge and strategies presented in SER 501a Assessment and Instruction for Students with Early Reading and Spelling Difficulties. The internship will include regular study and support meetings, classroom collaboration, and interchange via e-mail and electronic communications. It will also provide an opportunity for networking with teachers in other schools involved in building knowledge and skills for teaching early reading and spelling.

PREREQUISITE COURSE

Completion of SER 501a: Assessment and Instruction for Students with Early Reading and Spelling Difficulties

TEXT

Reading and texts used in SER 501a and additional readings based on the new literature contributed by instructors and participants.

STUDENT OBJECTIVES

Teacher participants will demonstrate the following competencies:

1. Knowledge of and ability to use various assessments in early reading and spelling
2. Knowledge of and ability to apply strategies for teaching young children with reading difficulties
3. Knowledge of ability to integrate early intervention strategies into the literacy curriculum

COURSE FORMAT

Teacher participants will participate in regularly scheduled professional development meetings in which they will learn about and discuss relevant literature, teaching strategies, and the application of the content from SER 501a. Participants will also work in their elementary classrooms to integrate and implement the strategies and approaches learned. The university collaborators will observe in the classrooms, model strategies, provide materials and resources, and assist the participants as they integrate and implement different teaching strategies.

COURSE REQUIREMENTS

Course requirements include the following activities:

1. Attendance and active participation in professional development meetings and classroom collaboration
2. Development and implementation of lessons/activities focused on teaching early reading and spelling
3. Case studies (2) including portfolio of work samples for one of the students
4. Professional Dialogues (2 – 3) and Reflective Journal entries (3 – 4)

Reflective journal entries should be made a minimum of 3 times during the year (*single sided loose-leaf paper if possible, please!*). Professional Dialogues will be conducted a minimum of two times during the year and should take about ten minutes. They will be audiotaped. During alternate dialogues, collaborators and teachers should talk about at least one lesson or activity including the following elements:

- Describe the activity (Purpose, Materials, Procedures, Observations)

And comment on the following:

- How did you feel it went?
- How did the students do overall and how did your case study students do?
- Did you encounter any problems?
- If you did this lesson/activity again, what would you keep or change?
- What will you do next?
- What questions remain for you about this activity?

GRADING

Grades will be based on active participation in the internship including the professional development meetings, classroom collaborations, development and implementation of early reading and spelling activities/lessons, case studies, professional dialogues, and reflective journal entries. It is expected that participants will receive either a grade of Superior or Pass. Other options available are a C, D, E, and Incomplete. Requirements will be weighted as follows:

1. Attendance and participation in monthly meetings	25%
2. Lessons/Activities for teaching early reading and spelling	25%
3. Case study and student portfolio	25%
4. Professional Dialogues and Reflective Journal entries	25%

To receive an Incomplete, the majority of the requirements must be completed and an agreed upon timeline submitted to the instructor for finishing the work. A grade of Incomplete automatically changes to an E if not completed in one year.

Phone Numbers at the University of Arizona:

Candy Bos:	621-0938
Patricia Foreman (Department Secretary):	621-3216
Janice Sammons, Deb Rhein, & Rachel Friedman in the RIME Office:	621-7893
Heidi Silver-Pacuilla at UASV:	458-8278 ext. 131

Appendix F

Teacher Assessment of Early Reading and Spelling

Teacher Assessment of Early Reading and Spelling[1, 2]

Department of Special Education and Rehabilitation
University of Arizona
1998

Directions: Answer each question, and fill in the appropriate circle on the answer sheet.

Background Information

1. Gender
   a. Female
   b. Male

2. Age
   a. 30 or under
   b. 31-40
   c. 41-50
   d. 51 or older

3. Ethnicity
   a. White
   b. Hispanic
   c. African American
   d. Asian/Pacific Islander
   e. Native American
   f. Other

4. Speak more than one language proficiently
   a. Yes
   b. No

5. Highest degree earned
   a. BA/BS
   b. MA/MEd
   c. EdS
   d. PhD/EdD
   e. Currently enrolled in undergraduate degree program
   f. Other

6. Elementary Education teaching certificate
   a. yes
   b. no

7. Special Education teaching certificate
   a. yes
   b. no

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[1]Development of this assessment was supported in part by federal grant H029K0061 (Project RIME) from the U.S. Department of Education, Office of Special Education Programs.

[2]Developed by Candace Bos and Nancy Mather with Nalan Babur, Rachel Friedman, Maria Nahmias, Ellen Pequesse, and Deborah Rhein. For information, contact Candace Bos (cbos@u arizona edu, 520-621-0938).

Teacher Attitudes about Early Reading and Spelling[3]

Directions: As a teacher, think about what you believe about reading and spelling instruction. Select the response that ***best*** indicates to what degree you agree with each item and fill in the appropriate circle on the answer sheet. **If there is an item that you do not know how to answer, you may omit it.**

	A Strongly Agree	B Agree	C Mildly Agree	D Mildly Disagree	E Disagree	F Strongly Disagree
17. Ability to rhyme words is a strong predictor of early reading success.	SA	A	MA	MD	D	SD
18. Letter recognition is a strong predictor of early reading success.	SA	A	MA	MD	D	SD
19. Poor phonemic awareness (awareness of the individual sounds in words) inhibits learning to read.	SA	A	MA	MD	D	SD
20. Encouraging the use of invented spelling can help children develop phonemic awareness.	SA	A	MA	MD	D	SD
21. K-2 teachers should know how to teach phonological awareness i.e., knowing that spoken language can be broken down into smaller units (words, syllables, phonemes).	SA	A	MA	MD	D	SD
22. Individual differences in phonological awareness in children help explain reading growth during primary grades.	SA	A	MA	MD	D	SD
23. A teacher should not be concerned when early readers' miscues do not change meaning.	SA	A	MA	MD	D	SD
24. When early readers do not know how to pronounce a word the most beneficial strategy to suggest is to use the context.	SA	A	MA	MD	D	SD
25. When early readers do not know how to pronounce a word, one good strategy is to prompt them to sound it out.	SA	A	MA	MD	D	SD

[3]Selected items were adapted from Deford, D .E. (1985). Validating the construct of theoretical orientation in reading. *Reading Research Quarterly, 20,* 351-367.

	A Strongly Agree	B Agree	C Mildly Agree	D Mildly Disagree	E Disagree	F Strongly Disagree
39. Phonic rules and generalizations should be taught to early readers.	SA	A	MA	MD	D	SD
40. Phonics instruction can help a child improve spelling abilities.	SA	A	MA	MD	D	SD
41. Children who make repeated spelling errors are likely to benefit from systematic instruction.	SA	A	MA	MD	D	SD

48. A *diphthong* is found in the word:
   a) coat
   b) boy
   c) battle
   d) sing
   e) been

49. A *voiced* consonant digraph is in the word:
   a) think
   b) ship
   c) whip
   d) the
   e) photo

50. Two combined letters that represent one single speech sound are a:
   a) schwa
   b) consonant blend
   c) phonetic
   d) digraph
   e) diphthong

51. How many speech sounds are in the word "eight"?
   a) two
   b) three
   c) four
   d) five

52. How many speech sounds are in the word "box"?
   a) one
   b) two
   c) three
   d) four

53. How many speech sounds are in the word "grass"?
   a) two
   b) three
   c) four
   d) five

54. Why may students confuse the sounds */b/* and */p/* or */f/* and */v/*?
   a) Students are visually scanning the letters in a way that the letters are misperceived.
   b) The students can't remember the letter sounds so they are randomly guessing.
   c) The speech sounds within each pair are produced in the same place and in the same way but one is voiced and the other is not.
   d) The speech sounds within each pair are both voiced and produced in the back of the mouth.

61. What is the rule for using a "ck" in spelling?
    a) when the vowel sound is a diphthong
    b) when the vowel sound is short
    c) when the vowel sound is long
    d) any of the above

62. Count the number of syllables for the word **unbelievable**
    a. 4
    b. 5
    c. 6
    d. 7

63. Count the number of syllables for the word **pies**
    a. 1
    b. 2
    c. 3
    d. 4

The next two items involve saying a word and then reversing the order of the sounds. For example, the word "back" would be "cab."

64. If you say the word, and then reverse the order of the sounds, **ice** would be:
    a. easy
    b. sea
    c. size
    d. sigh

65. If you say the word, and then reverse the order of the sounds, **enough** would be:
    a. fun
    b. phone
    c. funny
    d. one

Thank you for taking the time to complete this information!

Appendix G

Classroom Collaboration Form

Classroom Collaboration Form

Teacher:_____ Grade ____Observer: _____ Date: _____

Students: ____ Classroom ____ Small Groups ____ Individual

Time of Observation: _____ Person Who taught _____

Activity:

_____

Check and comment upon the early reading and spelling skills being taught:

	Rhyming
	Blending
	Segmentation
	Sound Manipulation
	Letter/Sound Activities
	Word Structure
	Sight Words
	Integration into Reading
	Spelling Patterns
	Spelling Demons
	Integration into Writing

Description of Lesson:	
Lesson Components:	
	Lesson Appropriate for Student Performance Levels
	Clear Instructions / Model
	Provides Practice
	Provides Feedback
	Appropriate Pacing and Duration
	Maintains Student Interest

Appendix H

SER 401a/501a Course Evaluation

Summer 1997

Instructors: Candace S. Bos, Ph.D.
Nancy Mather, Ph.D.
Rhia Roberts, Ph.D.

PROJECT RIME
SER 401a/501a Course Evaluation

DATE _____
CODE _____

Now that you have completed the course, please take a few minutes to complete this evaluation. For each item, provide a rating and relevant comments. This feedback is important to us. We will use it in determining the course effectiveness, guiding our model development, and making the course more valuable to others.

Please rate and comment on the following aspects of the course.

	not valuable	somewhat valuable	valuable	very valuable	extremely valuable
1. Course in general. Comments:	1	2	3	4	5
2. Importance of the course for your professional development. Comments:	1	2	3	4	5
3. Format and teaching style of the class. *Comments*: (Please comment on the balance of lectures, activities, and guest speakers.)	1	2	3	4	5
4. Textbook, readings, and handouts. *Comments*:	1	2	3	4	5
5. Materials shared and demonstrated. *Comments*:	1	2	3	4	5

6. Assignments. 1 2 3 4 5
Comments:

Listed below are topics covered in the course. Keeping in mind the emphasis placed on each topic during this course, please circle the number rating that represents your recommendation for future emphasis when this course is next offered.

		increase emphasis	same emphasis	decrease emphasis
7.	Characteristics of students with early reading and spelling difficulties Comments:	1	2	3
8.	Research advances in reading instruction Comments:	1	2	3
9.	Concepts of phonologic and orthographic awareness Comments:	1	2	3
10.	Explanation of Alphabetic Principle Comments:	1	2	3
11.	Assessment of phonological awareness Comments:	1	2	3
12.	Assessment of early reading and spelling Comments:	1	2	3
13.	Instructional strategies for phonological awareness Comments:	1	2	3
14.	Instructional strategies for early reading and spelling Comments:	1	2	3
15.	Incorporation of technology Comments:	1	2	3
16.	Classroom implementation and integration into the curriculum Comments:	1	2	3

What was most helpful about the course?

What would you <u>not</u> include in the course?

What would you add to the course?

What have you learned that you plan to use in the future?

Appendix I

SER 593: Internship Evaluation

Project RIME
Internship 1998-1999 Evaluation

Directions: Put an "X" by your rating.

1. How effective was this internship in assisting you in learning more about teaching early reading at spelling to children at risk for reading failure?

_____ very effective
_____ effective
_____ somewhat effective
_____ not very effective
_____ ineffective

2. How effective was the internship in facilitating your professional growth as a teacher?

_____ very effective
_____ effective
_____ somewhat effective
_____ not very effective
_____ ineffective

3. How effective was the internship in helping you integrate information from the RIME course into your teaching?

_____ very effective
_____ effective
_____ somewhat effective
_____ not very effective
_____ ineffective

4. Rate the usefulness of activities in helping you learn more about teaching early reading and spelling to children at risk for reading failure.

Monthly Meetings	Classroom Collaboration	Interactive Journal	Case Studies
_____ very useful	_____ very useful	_____ very useful	_____ very useful
_____ useful	_____ useful	_____ useful	_____ useful
_____ somewhat useful	_____ somewhat useful	_____ somewhat useful	_____ somewhat use
_____ not very useful	_____ not very useful	_____ not very useful	_____ not very usefu

5. Overall how useful was the RIME Project (summer course and internship) in helping you effectively teach early reading and spelling to:

Children at risk	Your class in general
_____ very useful	_____ very useful
_____ useful	_____ useful
_____ somewhat useful	_____ somewhat useful
_____ not very useful	_____ not very useful

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